PLATE IX.

Figs. 1, 1 *a*. *Mucronella porelliformis*, n. sp.
Fig. 2. *Idmonea radicata*, n. sp. 2 *a*. Enlarged, showing two oœcia.
Fig. 3. *Scrupocellaria minuta*, n. sp. 3 *a*. Dorsal view.
Fig. 4. *Nellia simplex*, Busk, showing oœcia.
Fig. 5. *Mucronella* (? *Lepralia*) *cothurnica*, n. sp. 5 *a*. Three cells, showing arrangement of zoarium.
Fig. 6. *Escharoides discus*, n. sp. 6 *a*. Marginal cell, showing avicularium on one side of notch. 6 *b*. Central cell, with peristome developed.

PLATE X.

Fig. 1. *Hornera spinigera*, n. sp. 1 *a*. Anterior surface. 1 *b*. Posterior surface.
Fig. 2. *Idmonea tortuosa*, n. sp. 2 *a*. Anterior surface. 2 *b*. Posterior surface, showing tortuous tubes.
Fig. 3. *Smittia latiavicularia*, n. sp. 3 *a*. Lateral view, to show avicularium on oœcium.
Fig. 4. *Cribrilina radiata*, var. *flabellifera*, nov. var.
Fig. 5. *Stephanopora cribrispinata*, nov. gen. et sp. 5 *a*. Cell, showing shape of orifice.
Figs. 6, 6 *a*. *Smittia tubula*, n. sp. 6 *b*. Primary orifice, with denticle.

XI.—*Note on the Extinct Reptilian Genera* Megalania, *Owen, and* Meiolania, *Owen*. By A. SMITH WOODWARD, F.G.S., F.Z.S., of the British Museum (Natural History).

THE relabelling of the Australian fossils in the British Museum, at various times described and figured by Sir Richard Owen under the names of *Megalania* and *Meiolania*, has lately necessitated a careful examination of the literature of the subject and comparison of specimens. Recent discoveries are generally admitted to have proved that several of the original determinations, founded upon imperfect materials, were erroneous; some of the fossils are truly Lacertilian, others are known with equal certainty to be Chelonian, and I am able to add on the present occasion that the remainder are Mammalian. The nomenclature of the genera is also somewhat confusing, and it may therefore be of interest briefly to summarize the present aspect of the questions involved.

The "Gigantic Land-Lizard" (*Megalania prisca*) of Australia was first made known in 1858 by Sir Richard Owen *,

* R. Owen, "Description of some Remains of a Gigantic Land-Lizard (*Megalania prisca*, Owen) from Australia," Phil. Trans. 1859, pp. 43–48, pls. vii., viii.

who described three undoubtedly Lacertilian vertebræ from the alluvial deposits of the Condamine River, west of Moreton Bay, Queensland, discovered by Dr. George Bennett and presented by him to the British Museum. They were shown to be very similar, except in size, to the vertebræ of the existing Australian Monitors; and it still remains doubtful whether the differences they present are really of generic value. The vertebræ "rival in bulk those of the largest living crocodiles." More than twenty years after this discovery Sir Richard Owen added a description of a complete dorsal vertebra from the same district of Queensland, and of a sacral vertebra from the neighbourhood of Melbourne, Victoria, as also of an occipital skull-fragment and associated caudal vertebra from Gowrie, Darling Downs *. Interesting portions of a large cranium were also described, which had been found by Mr. G. F. Bennett in King's Creek, associated with bones of *Diprotodon*, though not with vertebræ of the *Megalania* type. The latter fragments were *hypothetically* assigned to the same genus and species as the original fossils discovered in 1858, and the presence of bony horn-cores upon the skull led to a comparison with the small Australian *Moloch horridus*, which is also provided with dermal horns, though never of an osseous character. A restoration of *Megalania* was given, upon the assumption that the extinct and surviving types were closely allied. In 1881 a tail, completely ensheathed in bony armour like that of *Glyptodon*, was found at the same spot in King's Creek, whence had been obtained the fine portion of skull described in the previous year, and this, too, was determined † as belonging to what had now become known as the "Great Horned Lizard." *Uromastix princeps*, from Zanzibar, was next compared with the fossil, and Sir Richard Owen pointed out that the caudal armour of this lizard only differed from that of *Megalania* in the same manner as the horns of *Moloch* were distinguished from those upon the Queensland skull, namely, in the absence of bony tissue in their structure. The tail of *Moloch horridus* was also shown to be encased in horny scutes similarly disposed, these even "more closely repeating the number and arrangement of *Megalania*" than the scutes of *Uromastix*. Still another contribution to the subject was made in 1886 ‡, when a sacral vertebra from Gowrie, Darling Downs, was described, and also a number of foot-bones, supposed to show

* *Ibid.* part ii., Phil. Trans. 1880, pp. 1037–1050, pls. xxxiv.–xxxviii.
† *Ibid.* part iii., Phil. Trans. 1881, pp. 547–556, pls. lxiv.–lxvi.
‡ *Ibid.* part iv., Phil. Trans. 1886, pp. 327–330, pls. xiii.–xv.

that *Megalania prisca* was truly terrestrial, with well-developed claws.

Discoveries in a small island 200 miles from the Australian coast next commanded attention. A number of fossil remains from a superficial coral-sand formation in Lord Howe's Island, transmitted to the British Museum by Robert D. Fitzgerald, Esq., Surveyor-General, Sydney, New South Wales, were soon found to comprise parts of an animal very similar to the possessor of the horned head and armoured tail already known from a locality 400 miles distant in Queensland. Of these specimens Sir Richard Owen* described and figured portions of the skull and mandible, tail, and the (partly restored) pelvis, besides briefly noticing an anterior vertebra, a portion of the scapula, and a fragment of humerus. He concluded that they belonged to a new subgenus—perhaps a new genus—to be named *Meiolania*, comprising apparently two species, *M. platyceps* and *M. minor*. Associated with the described fossils, however, were numerous other fragments, which Mr. William Davies had placed among the Chelonia; and the whole were subsequently reexamined by Professor Huxley, who arrived at the conclusion that they were *all* Chelonian†. The animal was now considered to be most nearly allied to *Chelydra* and *Gypochelys* (*Macroclemmys*) and other Cryptodiran genera of that type; and Mr. G. F. Bennett's Queensland skull and tail were unhesitatingly removed from their association with the Megalanian vertebræ ‡ and referred to this new genus, for which Professor Huxley thought the name of *Ceratochelys* would be more appropriate than that of *Meiolania*. He also renamed *Meiolania platyceps*, *Ceratochelys sthenurus*. A new element was thus added to the Reptilian fauna of Pleistocene Australia, the Cryptodiran Chelonia being totally unrepresented there both at the present day and among known fossils from the superficial deposits. Still more satisfactory specimens of *Meiolania platyceps* afterwards reached Sir Richard Owen, who again presented descriptions to the Royal Society §, and concluded that the

* R. Owen, "Description of Fossil Remains of two Species of a Megalanian Genus (*Meiolania*) from Lord Howe's Island," Phil. Trans. 1886, pp. 471–480, pls. xxix., xxx.

† T. H. Huxley, "Preliminary Note on the Fossil Remains of a Chelonian Reptile, *Ceratochelys sthenurus*, from Lord Howe's Island, Australia," Proc. Roy. Soc. vol. xlii. (1887), pp. 232–238.

‡ All the vertebræ found with *Meiolania* in Lord Howe's Island are truly Chelonian and none like those named *Megalania prisca* have been met with in this locality.

§ R. Owen, "On Parts of the Skeleton of *Meiolania platyceps*, Owen," Abstract in Proc. Roy. Soc. vol. xlii. (1887), p. 297. The complete memoir has not yet appeared.

animal displayed affinities both with the "orders Chelonia and Sauria," but was more nearly allied to the latter, of which he proposed to form the new suborder Ceratosauria. These, with all other known specimens, were lastly submitted to a most careful examination by Mr. G. A. Boulenger*, who regarded Professor Huxley's general conclusions as unquestionable, but offered cogent reasons for placing the genus, not with the Cryptodiran Chelonians, but with the Pleurodira, which are at the present day so characteristic of the Australian region. Mr. Boulenger regards *Meiolania* as herbivorous and more terrestrial in habit than all known existing Pleurodires.

Another contribution to the correct interpretation of the "Megalanian" fossils is unwittingly made by Mr. Lydekker in the last volume of his Fossil Mammalian Catalogue just issued. Among the foot-bones assigned to uncertain members of the marsupial families of Nototheriidæ and Phascolomyidæ† are included specimens precisely similar to those described by Sir Richard Owen in part iv. of his memoir on "*Megalania*" as affording information in regard to the characters of the feet of this reptile. These specimens were not improbably all obtained at the same time and place, and there can be no doubt of the correctness of Mr. Lydekker's interpretation; some of them indeed bear Sir Richard Owen's MS. label "*Phascolonus?*" They were all registered by Mr. William Davies as pertaining to marsupials (nos. M. 3659, 60).

It thus appears that under "*Megalania prisca*" have been included (i.) lacertilian vertebræ and an occipital fragment, (ii.) a chelonian skull and tail-sheath, and (iii.) marsupial foot-bones. The first necessarily form the type specimens of the genus and species, and the last are obviously at once excluded from consideration. The second series of fossils, however, require a name.

Professor Huxley, as already remarked, unhesitatingly places Mr. Bennett's Queensland skull and tail in the same genus as the Lord-Howe's Island fossils, and the reference appears fully justified by the specimens at present known. But, as Mr. Boulenger observes, the rules of nomenclature do not permit of the adoption of a new name, *Ceratochelys*, however appropriate it may be, and the genus must henceforth be termed *Meiolania*.

With regard to species, the figures and descriptions of the

* G. A. Boulenger, "On the Systematic Position of the Genus *Meiolania*, Owen (*Ceratochelys*, Huxley)," Proc. Zool. Soc. 1887, pp. 554, 555.

† R. Lydekker, 'Catalogue of the Fossil Mammalia in the British Museum,' part v. 1887, p. 169.

Queensland specimens are at once conclusive of their distinctness from any form yet determined from the distant Lord Howe's Island, though they were not specifically distinguished or named by Professor Huxley. They are thus at present nameless; and I would venture to suggest that they may be most appropriately known as *Meiolania Oweni*, in honour of the distinguished comparative anatomist who has contributed more than any other to our knowledge of the Pleistocene Vertebrata of the far-off antipodes. Sir Richard Owen has often undertaken the interpretation of fragments which many would have looked upon as quite undeterminable; and by this bestowal of labour upon most unpromising materials he has aroused the enthusiasm of his colonial correspondents, which has resulted in the enormous mass of information now available concerning these ancient faunas, and has secured for the British Museum of Natural History that unrivalled series of Australasian remains which is one of its most distinctive features.

In conclusion it will be convenient for reference to tabulate the foregoing results as follows:—

Megalania (?*Varanus*) *prisca*, Owen.

Megalania prisca, Owen, Phil. Trans. 1859, pp. 43–48, pls. vii., viii. (Vertebræ.)
Megalania prisca, Owen, *ibid.* 1880, pp. 1037–1040, pls. xxxiv.–xxxvi. (Vertebræ and occipital fragment.)
Megalania prisca, Owen, *ibid.* 1886, pp. 327, 328, pl. xiii. (Vertebræ.)

Meiolania Oweni, A. S. Woodw.

Megalania prisca, Owen (*errore*), *ibid.* 1880, pp. 1041–1048, pls. xxxvii., xxxviii. (Cranium.)
Megalania prisca, Owen (*errore*), *ibid.* 1881, pp. 547–556, pls. lxiv.–lxvi. (Tail-sheath.)
Ceratochelys sthenurus, Huxley (in part), Proc. Roy. Soc. vol. xlii. (1887), p. 237. (Queensland cranium and tail-sheath.)

Meiolania platyceps, Owen (? also *M. minor*, Owen).

Meiolania platyceps, Owen, and *M. minor*, Owen, Phil. Trans. 1886, pp. 471–480, pls. xxix., xxx. (Portions of skull and tail-sheath, &c.)
Ceratochelys sthenurus, Huxley (in part), Proc. Roy. Soc. vol. xlii. (1887), pp. 232–238. (Various parts of skeleton.)

Marsupial Foot-bones.

Megalania prisca (*errore*), Owen, Phil. Trans. 1886, pp. 328–330, pls. xiv., xv. (Foot-bones.)